

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



(43) International Publication Date  
25 August 2005 (25.08.2005)

PCT

(10) International Publication Number  
**WO 2005/076975 A3**

(51) International Patent Classification<sup>7</sup>: **A61K 39/00**,  
39/385, 45/00, 47/00, C12Q 1/68

(21) International Application Number:  
PCT/US2005/003754

(22) International Filing Date: 4 February 2005 (04.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:  
60/542,371 6 February 2004 (06.02.2004) US

(71) Applicant (for all designated States except US): **MAYO  
FOUNDATION FOR MEDICAL EDUCATION AND  
RESEARCH** [US/US]; 200 First Street S. W., Rochester,  
MN 55905 (US).

(72) Inventors; and

(75) Inventors/Applicants (for US only): **WETTSTEIN,**  
**Peter, J.** [US/US]; 508 8th Avenue SW, Rochester, MN  
55902 (US). **STRAUSBAUCH, Mike** [US/US]; 4404  
8th Street N.W., Rochester, MN 55901 (US). **HARDIN,**  
**Heather** [US/US]; 724 18th Avenue NE, Rochester, MN  
55906 (US). **BORSON, Nancy** [US/US]; 415 15th Avenue  
NE, Rochester, MN 55906 (US).

(74) Agent: **ELLINGER, Mark, S.**; Fish & Richardson P.C.,  
P.A., 60 South Sixth Street, Suite 3300, Minneapolis, MN  
55402-1104 (US).

(81) Designated States (unless otherwise indicated, for every  
kind of national protection available): AE, AG, AL, AM,  
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,  
GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,  
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,  
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,  
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ,  
TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA,  
ZM, ZW.

(84) Designated States (unless otherwise indicated, for every  
kind of regional protection available): ARIPO (BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,  
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),  
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,  
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,  
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,  
GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report

(88) Date of publication of the international search report:  
10 November 2005

For two-letter codes and other abbreviations, refer to the "Guid-  
ance Notes on Codes and Abbreviations" appearing at the begin-  
ning of each regular issue of the PCT Gazette.

(54) Title: COMPLEXED POLYPEPTIDE AND ADJUVANT FOR IMPROVED VACCINES

(57) Abstract: Attachment of the strongly immunogenic polypeptide to a more weakly immunogenic polypeptide can precipitate and focus a CpG adjuvant to increase *in vivo* priming of a cytotoxic T-lymphocyte (CTL) response, and thus increase the immunogenicity of the more weakly immunogenic polypeptide. Accordingly, compositions that include a bipartite immunogenic polypeptide are provided herein. The bipartite polypeptide can include a CpG-interacting amino acid sequence fused to a CTL-activating amino acid sequence that can be heterologous to the CpG-interacting amino acid sequence. Also provided are methods of identifying and using a CpG-interacting amino acid sequence and a bipartite immunogenic polypeptide.

WO 2005/076975 A3